



# HANGMAN GAME

GUESS TO SURVIVE

## ELEC1005 PROJECT 1 REPORT

Group 4 - LAB 01 - TUE 16:00

## 1. Group Member Roles

### Planning :

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## 2. Planning

### 2.1 Requirement analysis [~Pratul & Andrew]

We undertake Requirement Analysis to understand the existing version of the game, then identify potential improvements such as existing defects, challenges faced by users, vulnerabilities in the software and lack of functionality, and then finally develop the requirements for the new version of the game that we aim to develop.

Therefore, we perform Requirement Analysis in three main steps :

#### **Current system**

We study and understand the original program and after repeated attempts at playing the game and exploring it, we list its features. The features are :

1. A plain white background on the home and play screen
2. Simple text header
3. No return to home button
4. A try letter button which has to be pressed everytime to make a guess
5. No error messages for invalid character guesses
6. No error messages for repeated guesses
7. No control on the difficulty of the word to be guessed
8. Contains invalid(words that are not english e.g. ls) / inappropriate words
9. Only can be executed via python (no executable file).
10. Can only be run on machines that have Python, with a specific version of flask (Python 3.8.10, Flask 1.1.1, Werkzeug 0.16.1).
11. No user manual user can refer to
12. No restriction on Player Name's length

## Possible Improvements

Having listed the features of the current version of the game, we identify possible improvements and other ideas that we wish to implement in future versions. They are :

1. Adding background images/animations
2. Improve text formatting
3. Improve formatting of buttons and other features
4. Adding home button
5. Adding difficulty levels
6. Using a cleaned set of words
7. Adding an on-screen keyboard
8. Making an executable file that can be run on any linux machine
9. Add a user manual

## New system requirements

Having listed the possible improvements in the current version of the game, we further classify these ideas as per their importance and how essential they are for the future versions of the game. We divide these ideas in decreasing order of need.

### Must have :

- a) A Linux executable that can run standalone without any supporting file
- b) A user manual

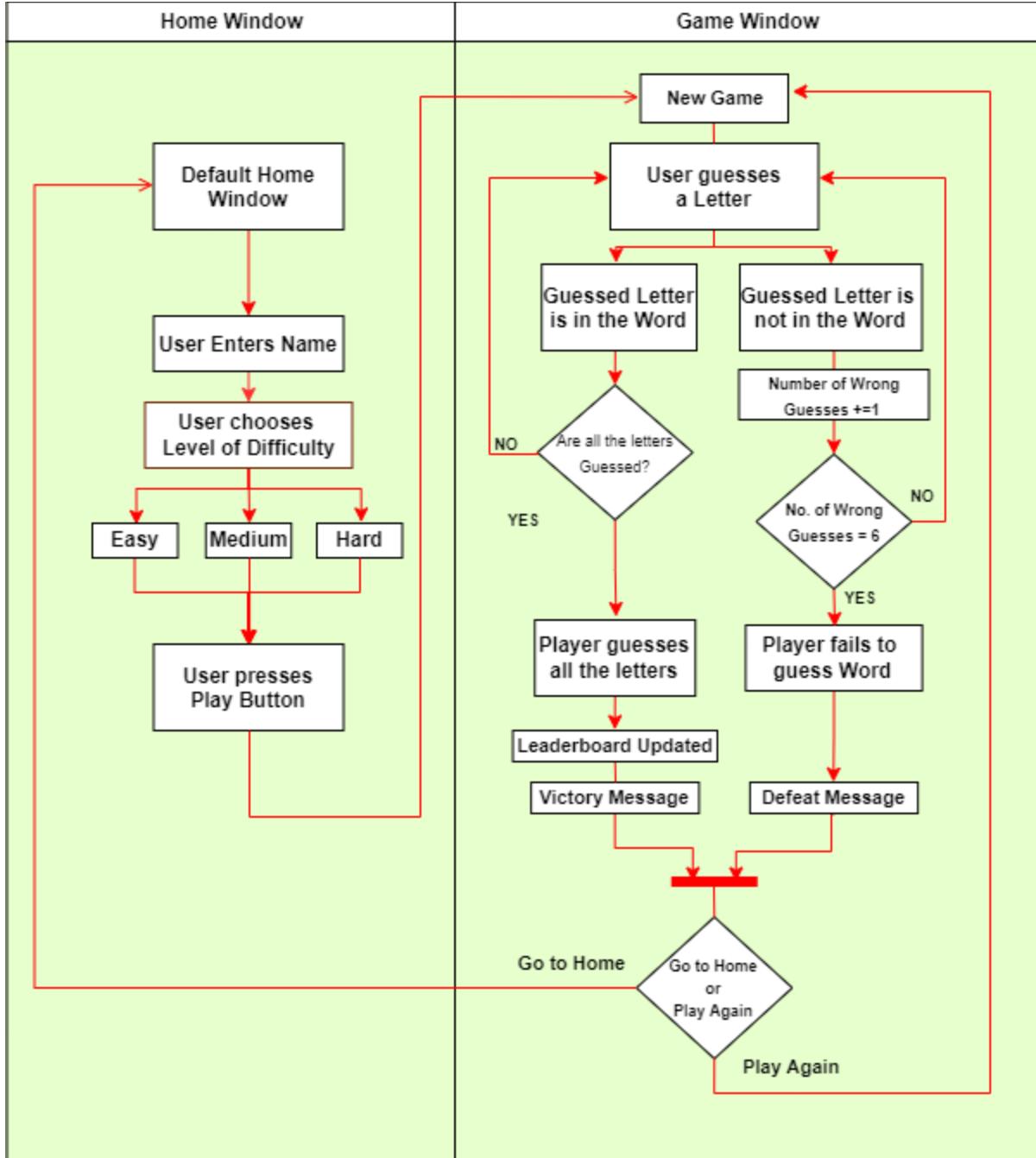
### Should have :

- a) A animated background for the Home screen
- b) A linear gradient background for the play screen
- c) A return to home button
- d) A logo for the game header

### Could have :

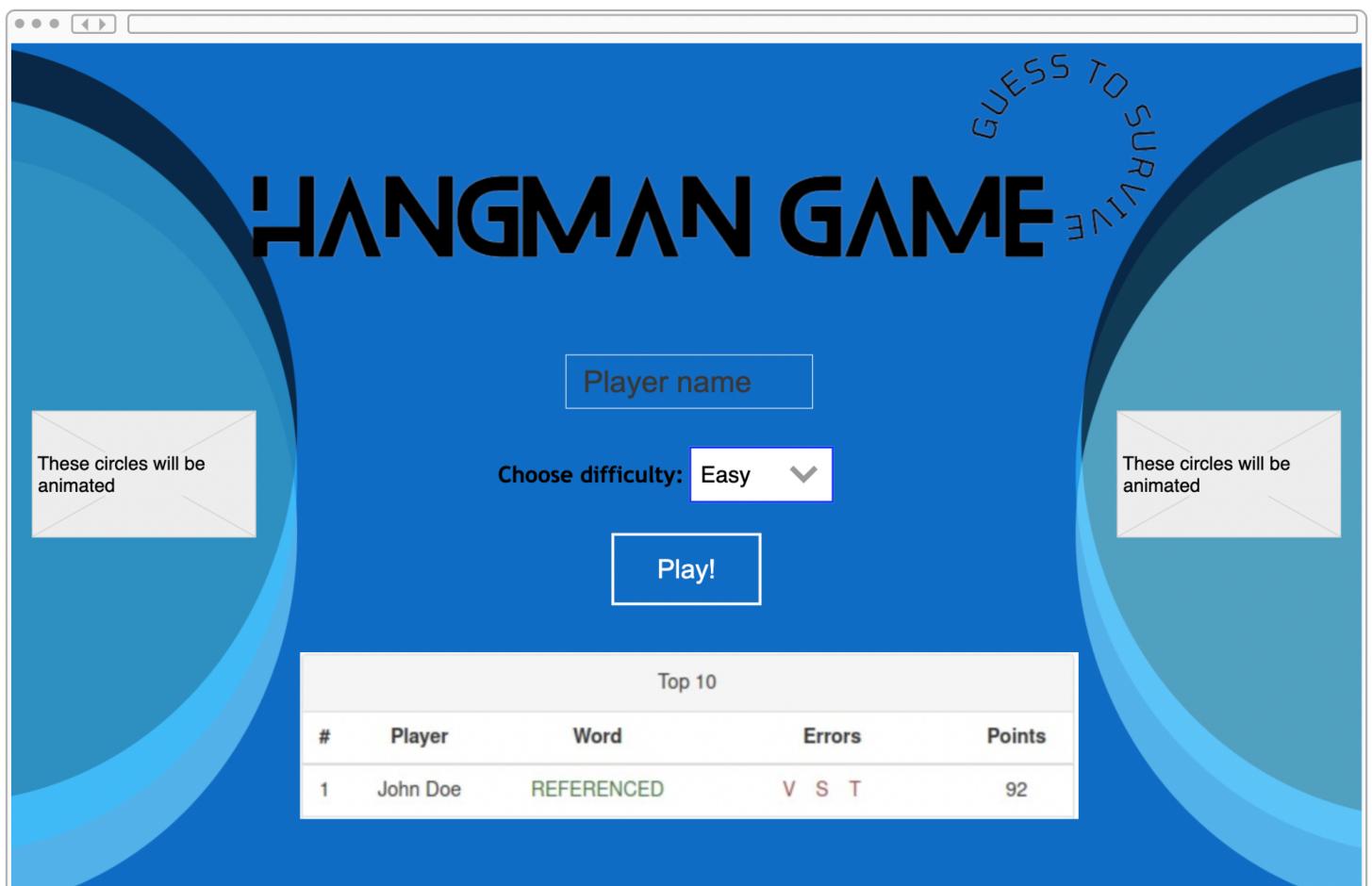
- a) A clickable on-screen keyboard

## 2.2 UML (Activity Diagrams) [~Pratul]

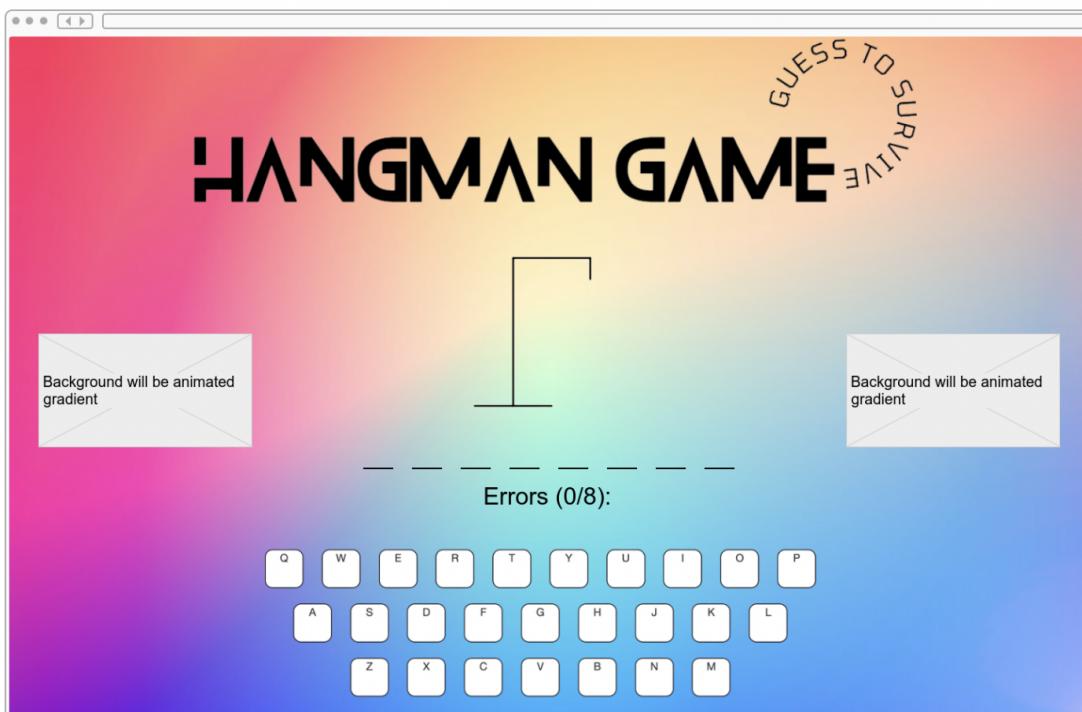


## 2.3 Wireframe [~ By Samuel]

### Home Page



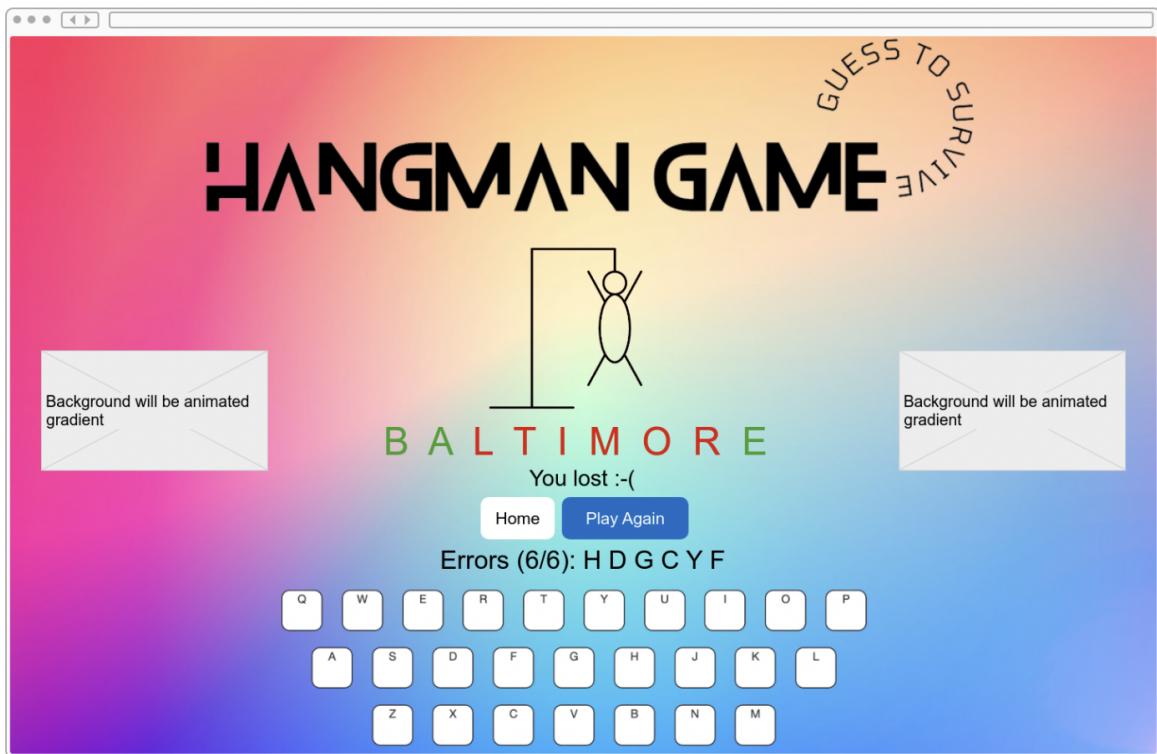
## Game Page



## Mid-Game Page



## Game Over Screen



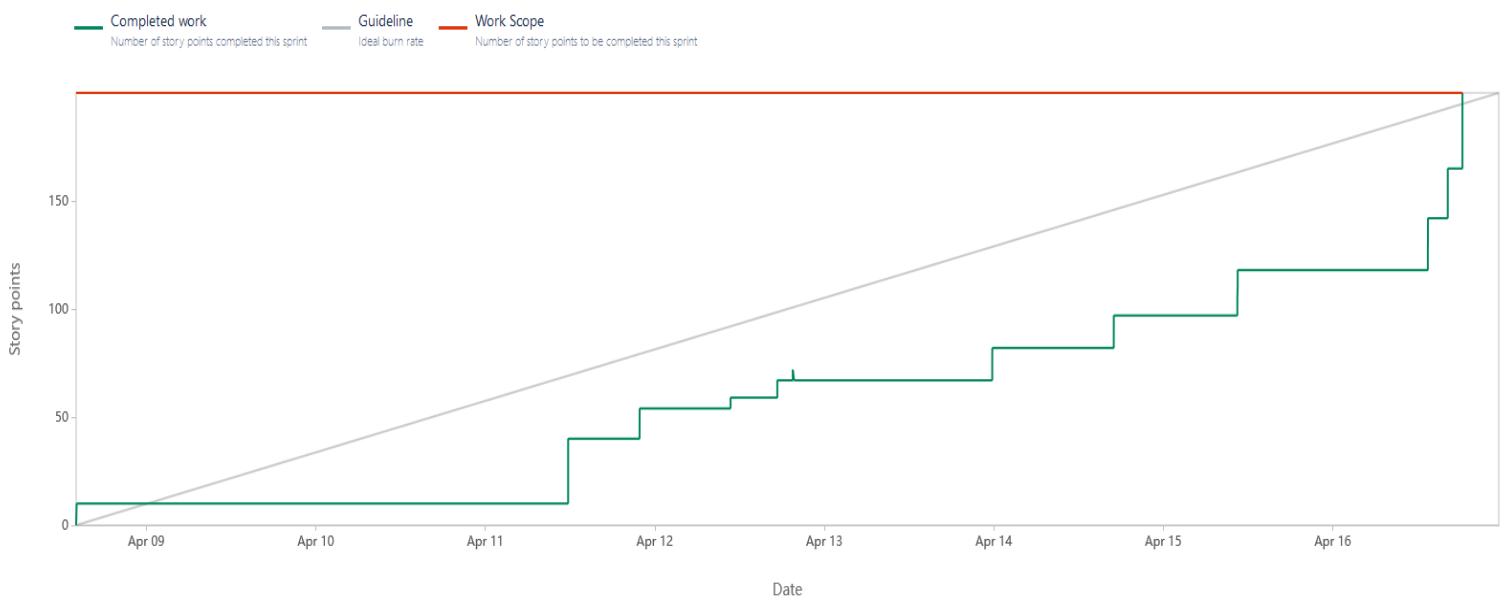
## Victory Screen



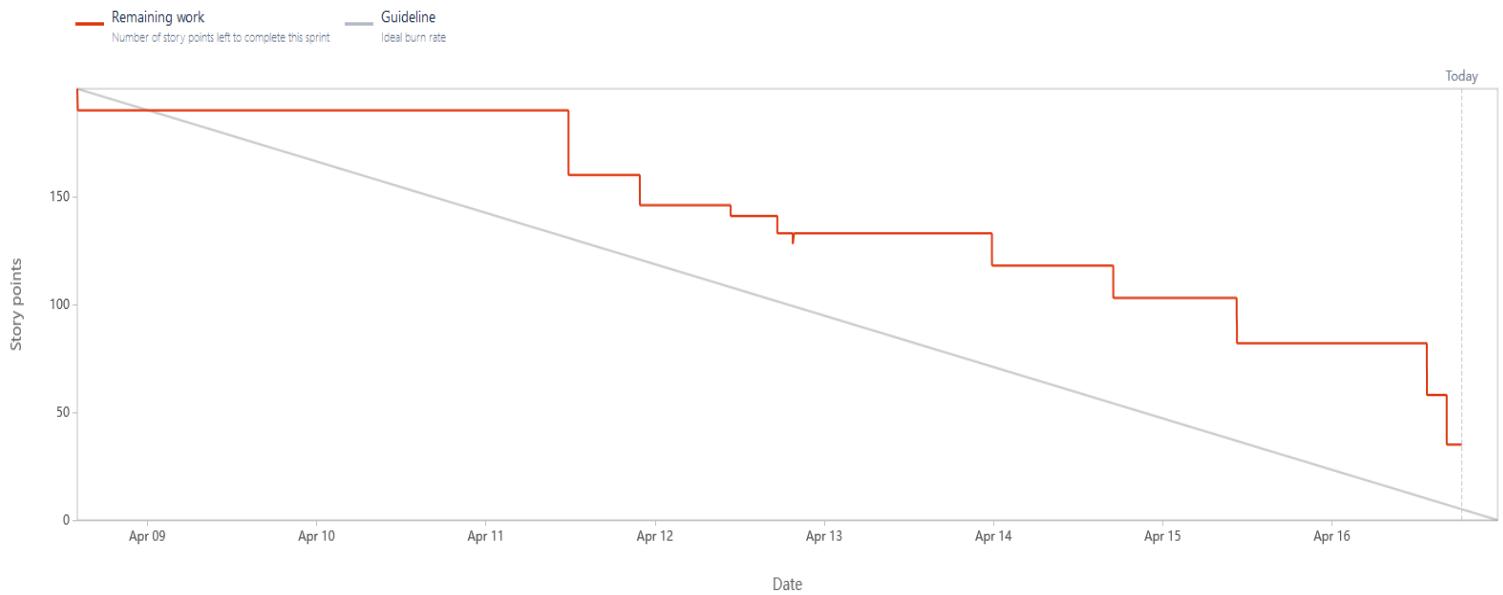


## 2.4 Burnup report and Burndown chart

### Burnup Report



### Sprint Burndown



## 2.5 What we Modified [~ By Pratul & Zeeshan]

<b>Modification</b>	<b>Implementation</b>	<b>Explanation</b>
<b>Add Logo in place of Title</b>	<b>Implemented</b>	A new 'Hangman Game - Guess to Survive' logo replaced the previous 'Hangman Game' title.
<b>Add an Abort Attempt Button</b>	<b>Implemented</b>	The 'Hangman Game' logo at the top now served as both an Abort Attempt Button and Redirect to Home Page Button.
<b>Add Music/short Sounds to indicate correct/wrong guesses</b>	<b>Not Implemented</b>	This was attempted but later left out to devote efforts to other essential modifications.
<b>Change Fonts/Formats</b>	<b>Implemented</b>	Several changes were made to the general fonts, formats, sizes and wordings throughout the game.
<b>Add a Background Image/Animation</b>	<b>Implemented</b>	The backgrounds now feature a gradient palette of changing colours.
<b>Add Difficulty Levels</b>	<b>Implemented</b>	3 levels of difficulty were added on the Home Page. Difficulty levels correspond to the length of the word to be guessed
<b>Add time-dependent scoring</b>	<b>Not Implemented</b>	Every player takes different approaches and time, plus time isn't really a core part of Hangman.
<b>Use a different clean bank of words</b>	<b>Implemented</b>	Original word bank contained invalid and inappropriate words.
<b>Add an On-Screen Keyboard</b>	<b>Implemented</b>	On-Screen Keyboard now displays letters which can be guessed and which have already been guessed. Letters are colour coded to show Green (Correct guess), Red (Wrong guess), White(Not yet guessed).

## 3. Implementation

### 3.1 Code Comments [~Zeeshan & Andrew]

Appropriate comments have been provided in each of the files in the program. A brief example is shown below from the file **main.js**:

```
/* Empty input */

$.ajax({
    type: "POST",
    url: '',
    data: data,
    success: function(data) {

        /* Refresh if finished */

        if (data.finished) {
            location.reload();
        }
        else {

            /* Update current */

            $('#current').text(data.current);

            /* Update errors */

            $('#errors').html(
                'Errors (' + data.errors.length + '/6): ' +
                '<span class="text-danger spaced">' + data.errors + '</span>');

            /* Update drawing */

            updateDrawing(data.errors, buttonpressed);
        }
    }
});
```

## 3.2 Code Modification Reasons [~Zeeshan & Pratul]

Modification	Location	Explanation
<b>Modified home.html</b>	<b>Line 22</b>	Restricted player's name to 12 characters and made a dropdown menu for the difficulty levels
	<b>Line 4-16</b>	Defines the waves in the home screen background and further links the file to style1.css
<b>Modified main.js</b>	<b>Line 37-38</b>	Turns the corresponding letter guesses on the on-screen keyboard, red or green, depending on whether it is correct or not
<b>Modified main.css</b>	<b>Line 31-76</b>	Formatting for each element on the play screen
<b>Added Hangman-Title.png</b>	'Hangman/static/Hangman-Title.png'	The game's header logo.
<b>Added error.js</b>	'Hangman/static/error.js'	Program gives error if guessed letter not an alphabet or already guessed before
<b>Added keyboard.js</b>	'Hangman/static/keyboard.js'	To detect when the user enters a guess via keyboard, and make a POST request
<b>Added mouse.js</b>	'Hangman/static/mouse.js'	Allows user to click on the on-screen keyboard to enter guesses
<b>Added Favicon.png</b>	'Hangman/static/Favicon.png'	The Favicon : the skull logo in the browser tab
<b>Added style2.css</b>	'Hangman/static/style2.css'	Contains text formatting and adds a Linear Gradient background to the play screen
<b>Added style1.css</b>	'Hangman/static/style1.css'	Adds a Background Animation

		for the home screen
	'Hangman/static/style1.css'	Contains text formatting and overall front end development of the project.
	'Hangman/static/style1.css'	Added the background animation for the player name input box.
<b>Modified index.html</b>	<b>Line 20</b>	Change the game title to a logo
	<b>Line 31-69</b>	Contains the keys for the on screen keyboard
<b>Modified play.html</b>	<b>Line 4</b>	Linked file to the style2.css
<b>Added easyWords.txt</b>	'Hangman/words/easyWords.txt'	Contains 3 to 6 lettered words, i.e., Easy
<b>Added mediumWords.txt</b>	'Hangman/words/mediumWords.txt'	Contains 10+ lettered words , i.e., Medium
<b>Added hardWords.txt</b>	'Hangman/words/hardWords.txt'	Contains 7 to 9 lettered words , i.e., Hard
<b>Modified hangman.py</b>	<b>Line 21-37</b>	Added 3 different levels in the game file as well as linked the different levels to their respective word file to make it work properly.
	<b>Line 119</b>	Added 'db.create_all()' to properly update the database for the score leaderboard

## 4. Quality Assurance

### 4.1 Test cases for Original Program [~Pratul & Weijia]

Test case	Description	Step	Result
<b>Cross Platform Compatibility</b>	Checking whether the program runs in different environments	Running the game in different OS	Failed. Only runs in a specific Flask environment
<b>User Guesses are registered</b>	Checking if the game detects whenever the user guessed a letter	Running the game and guessing letters	Successful. Each letter typed is shown on the screen
<b>Test incorrect inputs (repeated/invalid)</b>	Check that the game will not be updated, when a character is repeated or a character is invalid(letters and symbols)	Repeating invalid words multiple times in the game screen	No invalid letter found
<b>Checking Leaderboard is functioning</b>	Checking whether the leaderboard is updated with new high scores	Making a new high score and checking the table	Leaderboard is updated correctly
<b>Testing the Play Again</b>	Checking that the leaderboard is still updated when user clicks Play Again	Press play again, and checking the leaderboard after playing one round	New records are updated correctly.
<b>Executable is Standalone</b>	The executable should work without the supporting files	Moving hangman.py into a separate directory and running it	Game runs successfully

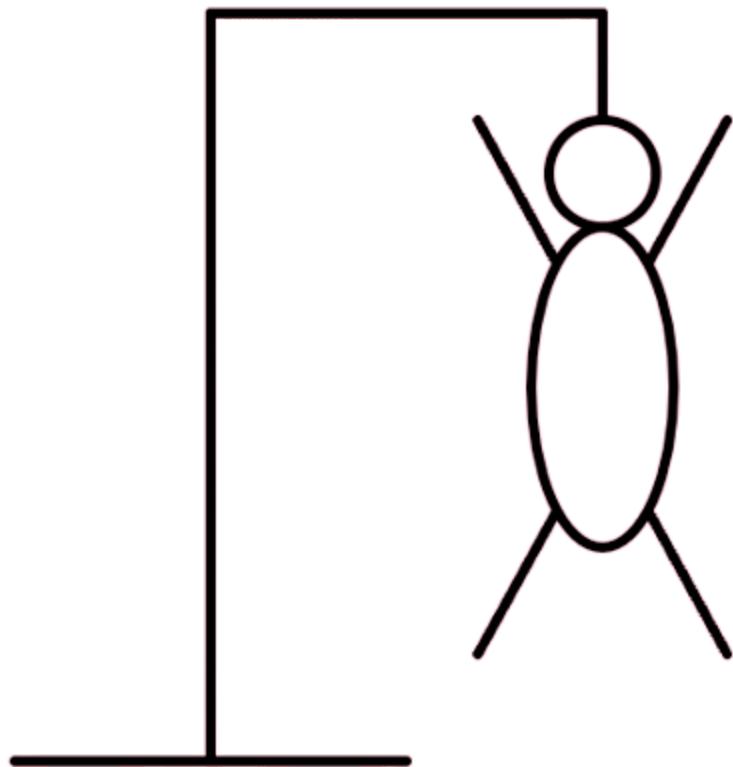
## 4.2 Test cases for Modified Program [~Pratul & Jike]

Test case	Description	Step	Result
<b>Punctuations in Player Name</b>	The user could enter punctuations in their name	Typing some strange punctuations like @#\$%	Successful, and could be recorded as user's name
<b>Normal Functioning of Program</b>	After entering Player Name and clicking the play button, the game page should load up	Following the instructions in the User Manual	Game runs successfully
<b>Compatibility in the browser</b>	Game should be running in different browsers	Running the game in Chrome and Firefox.	Running successfully in both browsers.
<b>Difficulty level of new word after pressing Try Again</b>	New word after pressing try again should be of the same chosen difficulty	Pressing try again after an attempt	New word isn't always from the chosen difficulty level
<b>Internet connection</b>	Game should run without an internet connection	Running the game without an internet connection	Runs successfully. Doesn't require internet to run
<b>Character limit on players name</b>	Users could type a name <= 12 characters	Using a name of 7 letters.	Passed. Name is correctly registered.
	Users could type unnecessarily long names	Pasting a 13 character word into the player name	Only 12 characters of the pasted word are displayed. Anything user types after 12 letters will not be allowed
<b>Executable is Standalone</b>	The executable should work without the supporting files	Moving the executable into a separate directory and running it	Game runs successfully

## 5. User Manual [~ Samuel & Pratul]



### USER MANUAL





## Contents

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- Precautions
- Warning
- Tips for Effective Operation
- Name of Each Part and its Function
- Directions on How to Run the Game
- Directions on How to Play
- Proper Installation
- Troubleshooting
- Contact the Owners
- The Owners

## Precautions

- Before running the Hangman Game, please read the complete User Manual carefully to understand the proper operation of the Game.
- After you have read this user's manual, please keep it in safekeeping. If someone else takes over as user, ensure the manual is also passed on to the new user.

### WARNING

- The application "Hangman Game - Guess to Survive" must only be downloaded from the [official GitHub repository](#).
- Any illegal or unauthorised copying/plagiarism of the Game is strictly prohibited.
- Any such actions will be dealt with according to The University of Sydney's [Academic Honesty in Coursework Policy 2015](#) and the [Academic Honesty Procedures 2016](#).
- Do not install if your device has less than the required storage.

## Tips for effective operation

Please observe the following for the most economic and comfortable performance of the application.

- **For Linux Users**

The Game should run perfectly on your machine without any issue.

- **For Windows Users**

It is advised that you download a virtual machine like VMWare or VirtualBox and then install a Linux environment (preferably Ubuntu 64-bit) on that virtual machine.

- **For MacOS Users**

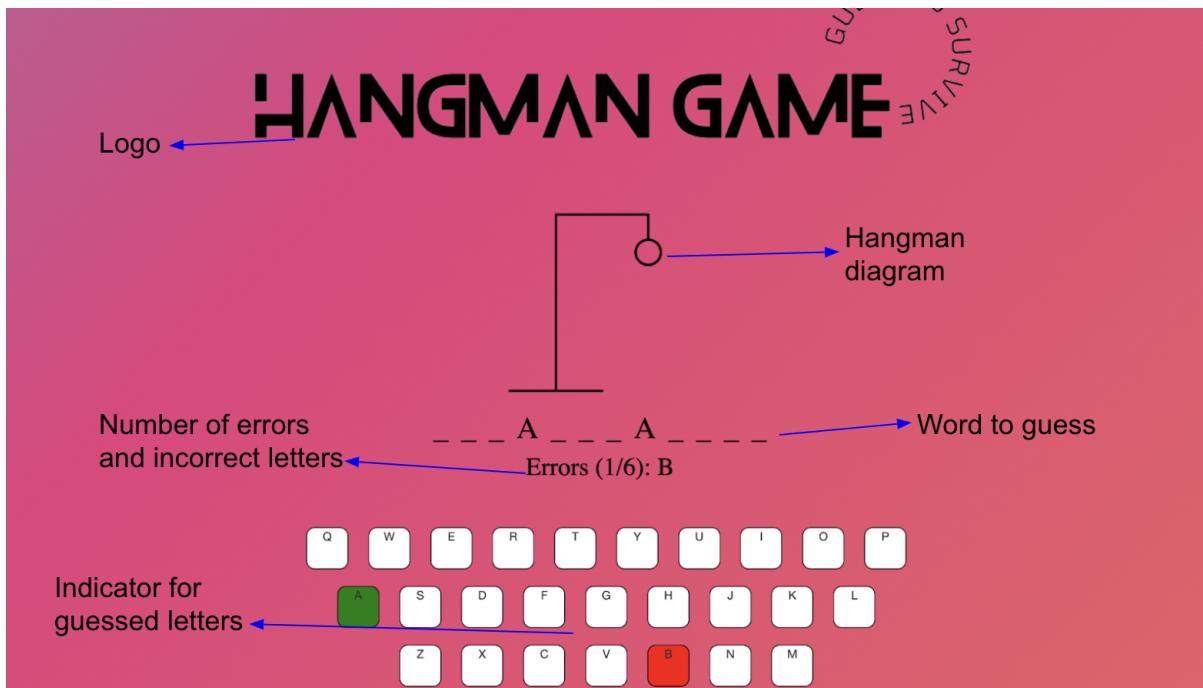
It is advised that you download a virtual machine like VirtualBox and then install a Linux environment (preferably Ubuntu 64-bit) on that virtual machine.

## Name of Each Part and its Function

### Home Page



### Mid game Page



### Play Again Page



### Directions on How to Run the Game

- 
1. Open a terminal window on your linux machine.
  2. Navigate to the project directory, where the hangman executable file is located.
  3. Run the command '`chmod 777 hangman`'.
  4. Now run the command '`./hangman`'.
  5. Now, in the terminal window, click on the link, usually '<https://0.0.0.0:5000/>', to open it in the browser.
  6. Congratulations! You have successfully started the Game!
  7. Continue to '*Directions on How to Play*'.
  8. When you are done playing the game, close the browser window. Also, to safely terminate the program, press **Ctrl+C** in the open terminal window to terminate the program and then proceed to close the Terminal window.

**Note :** DO NOT close the terminal window before closing the browser window as it might obstruct the normal functioning of the Game.

## Directions on How to Play

1. Click on the “Player name” box located in the middle of the page and type your name or desired username - refer to “Homepage diagram”.
2. Choose which difficulty you desire to play on by clicking on the dropdown box that is located below the “Player name” box and beside “Choose difficulty:” - refer to “Homepage diagram”.
3. Start the game by pressing the “Play!” box located below “Choose difficulty:” - refer to “Homepage diagram”.
4. Guess which letter you want by pressing on the desired letter on your keyboard. Ensure you are on the page when guessing your desired letter. - refer to “Mid game page”.
5. After you have finished guessing the word, press the “Home” button to return to the home screen or press “Play Again” to start a new game. - refer to “Play again page”

## Proper installation

### Suitable Space for Installation

- Ensure you have enough storage to download the application on your device.
- A storage capacity of 20 GB and Memory of 4 GB is recommended to run the program hassle-free.

## Suitable Installation Position

- Ensure the installed application is located in an appropriate spot.
- Make sure you're aware of the installation location since it is essential in order to run the game.

## Correct Operating System

- Make sure the device you are installing the application on Linux Operating System only.
- Refer to '*Tips for Effective Operation*' if you are a Windows/MacOS user.

# Troubleshooting

Please carry out the following checks before contacting the owners.

**Problem :** Page Elements not loading properly.

**Description :** It is possible that sometimes Background/Animation/Other elements may load incorrectly or incompletely and make the page look broken or stuck.

**Solution :** Clear cache and cookies from your browser settings. Refresh the page. If the problem still persists, try running the Game on another browser (preferably Firefox).

**Problem :** Terminal shows '*bash: ./hangman: Permission Denied*'

**Description :** This means you don't have the user access rights to run the executable on your account.

**Solution :** Run 'chmod 777 hangman' and then try executing the executable using '*./hangman*'. If the problem still persists, contact the administrator of the PC to gain read & write access to run the executable.

**Problem :** Link in Terminal to open Game taking too long

**Description :** When clicking on the '<https://0.0.0.0:5000/>' link in Terminal, to open the Game, the browser may take a long time to open or not open at all.

**Solution :** Right click on the link and select 'Open in Browser'. If the problem still persists, copy the link and paste it directly in the browser.

## Contact the Owners

❖ You may contact the owners in the event of the following :

- The application fails to run despite troubleshooting.
- The application starts to malfunction.
- You discover a new bug/problem in the Game.
- You have suggestions/ideas on how to make the Game better.
- Paranormal activities occur ie. ghost sighted while running the application.

## The Owners

### PRATUL SINGH RAGHAVA

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### ZEESHAN ANSARI

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